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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/528,201 03/17/00 SAEKI

M P353-9049

EXAMINER

004372 MMC2/0914
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TIBBITS, P
ART UNIT

PAPER NUMBER

2838
DATE MAILED:

09/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/528,201

Applicant(s)
Saeki et al.

Examiner
Pia Tibbits

Art Unit
2838



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Aug 21, 2001

2a) ☐ This action is FINAL.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 6-20 is/are pending in the application

4a) Of the above, claim(s) _____ is/are withdrawn from consideration

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 6-20 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other:

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DETAILED ACTION

This Office action is in answer to the communication filed August 21, 2001.

Claim Objections

1. Claim 7 is objected to under 35 CFR § 1.75(b) since claim 7 is essentially a duplicate claim of claim 6 since it does not add new limitations.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6-20 recite a "forced off signal", a "forced off state" and a "forced off unit", which need to be further clarified, and addressed in the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-20, as best as they are understood at this time, are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 3611484.

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DE 3611484 discloses a method for obtaining a low discharge protection for a rechargeable battery by monitoring the battery voltage. DE 3611484 also discloses a portable lamp unit incorporates a series circuit (10) containing a rechargeable battery (11), an on/off switch (51), a bulb (h1) and a transistor (53). A control circuit with a reference voltage (Uref.) source (17), threshold switch (18), PWM oscillator (19) and comparator (20) collectively operate a second transistor switch (52) such that when the battery voltage (Ubatt) falls to a first threshold level the transistor (53) conducts only intermittently at the oscillator (19) frequency e.g. 100 to 500 Hz to materially reduce the bulb (h1) brightness and give positive warning of low battery (11) volts. Complete battery (11) discharge is prevented by the opening of the switch (52) if the voltage falls further to a second lower threshold.

DE 3611484 does not disclose specifically monitoring of each individual cell voltage. However, it is well known in the art that in large battery units (traction batteries) it is necessary to monitor the voltage of each individual cell.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

7. The Prior Art made of record and not relied upon is considered pertinent to applicant's disclosure, as best as it can be understood at this time. The prior art cited in PTO-892 and not mentioned above

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disclose related apparatus, as best as it can be understood at this time: **Lang [5619126]** discloses a circuit arrangement for automatically decreasing the load current, comprising a series arrangement formed by a load (2) and a first electronic switching device (1) and connected to a DC source of power (U), the first switching device being driven by a driver (3), and further comprising a control circuit (4) controlling the driver (3), characterized in that the control circuit (4) is adapted to be initiated (IN) by means of a second electronic switching device (T5), so that the second electronic switching device (T5) connects the first terminal (A) of a capacitor (C2) and of a first resistor (R6) as well as the base of a transistor (T3) to the one pole (+) of the DC source of power (U), with the main current path of the transistor (T3) being between the input of the driver (3) and the other pole (reference potential) of the DC source (U), that the second terminal of the capacitor (C2) and of the first resistor (R6) is coupled to the other pole (reference potential) of the DC source (U), and that the end © of the first electronic switching device (1) connected to the load (2) is coupled to the second terminal of the capacitor (C2) through a feedback resistor (R8).

Eguchi et al. [5547775] discloses a circuit for preventing overcharge and overdischarge of series-connected secondary batteries (Abat, Bbat), comprising an overcharge detecting circuit (Comp2 and Comp4) and an overdischarge detecting circuit (Comp1 and Comp3) connected between a positive electrode and a negative electrode of each of said secondary batteries (Abat, Bbat); each of the circuits comparing a voltage of each of said batteries against a respective overcharge reference voltage (V1) and a respective discharge limit voltage (V4), a discharge circuit (R, T1 and R, T2) connected between the positive and negative electrodes of each secondary battery (Abat, Bbat) and controlled by an output level of said overcharge detecting circuit (Comp2 and Comp4); and a discharge load and a charging power terminal (+Eb, -Eb) characterized by a circuit (T4, T6, T7) comprising a first switch (T6) for interrupting the charge current for all series-connected secondary batteries in accordance with the output level of each of said overcharge detecting circuits (Comp2 and Comp4), wherein said overcharge detecting circuit (Comp2, Comp4) of each of said batteries (Abat, Bbat) has a respective

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hysteresis circuit (1, 2) which in combination with the circuit, achieves the following functions: when any overcharge detecting circuit (Comp1 or Comp4) has detected a voltage exceeding said overcharge reference voltage (V1) of a respective secondary battery (Abar or Bbat) and the overcharge overflow of said battery, in response to the output level, has discharged into the respective discharge circuit (R, T1 and R, T2) to a discharge voltage (V2) which is lower than the overcharge reference voltage (V1), the overcharge detecting circuit resumes the rechargeable state to start charging of the battery (Abar or Bbat) again, therefore overcharge of any of the secondary batteries (Abar or Bbat) is prevented and the capacities of said batteries are balanced in overcharge actions; and control means for controlling ON and OFF of a second switch (T5) for cutting off discharging current into the discharge load when the overdischarge detecting circuit detects that a battery voltage drops below the overdischarge limit voltage (V4). **Sanpei et al.** [5304915] discloses voltage detectors (17, 18, 19) provided to respectively detect terminal voltages of batteries (14A, 14B) connected in series. A switch (16) is provided in series to the batteries between a common terminal (11) and a charge terminal (13). When the terminal voltage of the batteries exceeds a battery design voltage in charging the batteries, the switch is turned off according to an output from corresponding voltage detectors to cut a charging current. **A switch (15) is provided between the common terminal and a discharge terminal (12). When the terminal voltage becomes equal to or less than a set voltage, the switch is turned off and a discharging current is cut off.**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is (703) 308-7305. If unavailable, contact the Supervisory Patent Examiner Peter Wong whose telephone number is (703) 305-3477.

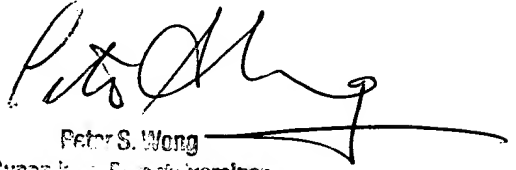
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9. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is *(703) 308-0956*.

Papers related to Technology Center 2800 applications **only** may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is *(703) 308-7722* or *(703) 308-7724*.

PFT

September 13, 2001


Peter S. Wong
Supervisor, Examination
Technology Center 2800